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ABSTRACT

Three components (manpower needs, availability of students, program effectiveness) for priority training area rankings, drawn up by the Priority Training Areas and Priority Programs Ad Hoc Committee of Iowa, supplement the areas list identifying the occupational areas for priority programs. Career education consultants worked with management staff personnel to develop a model establishing methods and procedures for building a rating system for each factor with the use of various data sources as tools for rating. Section 1 of this three-part report introduces the document. Section 2 provides the descriptions and examples of rating techniques for each component. Section 3 discusses ranking procedures; the results of which are updated every year. A five-page table of priority program rankings is provided with the program areas names assigned according to the Office of Education taxonomy structure. Points are allocated according to manpower needs, student availability, and program effectiveness. The appendix contains the career education planning model and lists its components (people needs data, resources data, and determining program effectiveness). (JB)

Iowa Priority Program Areas Requiring Specialized Training of Less Than Baccalaureate Degree

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The need for information to indicate training priorities has been recognized by the Iowa General Assembly, the Iowa Career Education Advisory Council, and the Iowa State Board of Public Instruction.

To obtain needed input from interested and knowledgeable individuals, Dr. Robert D. Benton, State Superintendent of Public Instruction, organized the Priority Training Areas and Priority Programs Ad Hoc Committee to help department personnel determine criteria for developing the Priority Training Area List and the Priority Program List.

Twelve different organizations were contacted, representing secondary and postsecondary schools, related state government agencies, and educational associations. The following committee members contributed their recommendations:

Adult Directors Association, Mr. Conrad Dejardin, Director of Adult and Continuing Education, Iowa Valley Community College, Marshalltown;

Advisory Council and Coordinating Committee for the Improvement of Education in Iowa, Dr. Richard Ploeger, Superintendent, Marshall Joint County School System, Marshalltown;

Area School Superintendents Association, Dr. Edwin Barbour, Superintendent, Iowa Central Community College, Fort Dodge;

Iowa Community College Student Personnel Association, Mr. Don Fleming, Dean of Student Personnel, Iowa Valley Community College, Marshalltown;

Iowa Development Commission, Mr. Marvin Lind, Assistant Director, Des Moines;

Iowa Employment Security Commission, Ms. Judy Erickson, Supervisor of Research and Reporting, Des Moines;

Iowa Personnel and Guidance Association, Mr. Eric Linden, Guidance Services, Clarion Community School District, Clarion;

Secondary Directors, Coordinators, and Administrators, Mr. James Law, Adult/Continuing Education, Clinton Community School District, Clinton;

Special Needs Coordinators Association, Mr. Dave Bappe, Learning Center Coordinator, Northeast Iowa Area Vocational-Technical School, Calmar;

State Career Education Advisory Council, Dr. Robert Kiser, Superintendent, Western Iowa Tech, Sioux City;

State Manpower Planning Council, Dr. Bessie Gerstenberger, Education Coordinator, Office of Planning and Programming, Des Moines;

Vocational-Technical Directors Association, Mr. Edward E. Schiefer, Campus Director, Southeastern Community College, West Burlington

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IOWA PRIORITY TRAINING AREA RANKINGS

I. Introduction

The Priority Training Areas List, published earlier this year, (January, 1974) identified the occupational areas with a significant net labor demand (labor demand less labor supply). Developing priorities in programs, however, requires the consideration of several other essential factors. These factors were identified by the Priority Training Areas and Priority Programs Ad Hoc Committee during their sessions, and included such components as Manpower Needs, Availability of Students, and Program Effectiveness. Further discussion and investigation led to the more detailed model whose components were listed as:

I. Manpower Needs

II. Availability of Students
- A. Student Interest
- B. Student Need

III. Program Effectiveness
- A. Attrition
- B. Placement Rate
- C. Cost/Benefit

After the components were identified, Career Education consultants worked closely with management staff personnel to develop a working model to establish methods and procedures for building a rating system for each component. Formulas and equations were developed and applied to rate each program for each identified component. Then the ratings were summed to arrive at the relative rankings of the programs.

Every attempt was made to achieve and retain the optimum degree of objectivity in the ratings. Information utilized was gleaned from such sources as the Career Education Needs Information System (CENIS) Interface, program cost data from the Area Schools Division, annual vocational education student follow-up reports, and the Dictionary of Occupational Titles (D.O.T.) supplement entitled "Selected Characteristics of Occupations (physical demands, working conditions, training time)." Use of these data sources as tools for rating the various components greatly reduced the number of subjective judgments required.

II. Descriptions and Examples of Rating Techniques for Each Component

A. Manpower Needs - 30 Points Maximum

Manpower Needs Component - 30 points maximum

a. Sources of Data:
Career Education Needs Information System (CENIS) Labor Demand Survey reports.

b. Rating Procedures:
Locate the labor demand for 1975 for each program area to be rated. Subdivide the demand figure into the expansion/replacement factors. Derive the percentage relationship between the two factors and apply this percentage against the labor supply. Subtract the resulting supply factors from the need factors to obtain the net needs. Find the relationship of the net needs factors to the total current employment in this occupation and show these percentages. Since expansion needs are much more significant for training considerations than are replacements, a three-to-one weighting factor is used to reflect this relationship. Thus, expansion percentages are multiplied by three, replacement percentages are multiplied by one, and the resulting percentages are summed. This summed percentage factor is then multiplied by 30 (the total point value allowed for this component) to derive the final point allocation.

c. Examples of Rating Method:

Taxonomy	Program Area Name	Labor Demand	Supply	Net Need	% of Need in Occup.	Points
04.1900	Transportation	Expans. 1,612	41 (51%)	1,571	14% x 3 = 42	
		Replace. 1,574	39 (49%)	1,535	14% x 1 14	
		3,186	80	3,106	56% of 30	17
07.0303	Nursing Assistants	Expans. 221	63 (9%)	158	2% x 3 = 6	
		Replace. 2,183	637 (91%)	1,546	18% x 1 = 18	
		2,404	700	1,704	24% of 30	7

B. Availability of Students - 40 Points Maximum

1. Student Interest Component - 20 points maximum

a. Sources of Data:
Career Education Needs Information System (CENIS) Student Interest and Labor Supply survey reports, operating information for average section size.

b. Rating Procedures:

From the CENIS Interface, locate the number representing primary student interest. Then divide this number by the sum of the average section size plus the total supply, $P = \frac{Si}{Ss + Su}$ where P = points, Si = Student Interest, Ss = average Section Size, and Su = Labor Supply. The result comprises the point assignment for that occupation.

c. Examples of Rating Method:

Taxonomy	Program Area Name	Student Interest	Avg. Section Size	Supply	Points (20 max.)
04.1900	Transportation	3,189	12	80	20
07.0303	Nursing Assistants	565	10	700	1

2. Student Need Component - 20 points maximum

a. Sources of Data:

Dictionary of Occupational Titles (D.O.T.) Supplement I and the Postsecondary CE-4 Program Master (for length of program).

b. Rating Procedures:

Each program has been rated to determine its potential for meeting the needs of individuals with specific employability problems.

To facilitate the rating process, the identified student needs have been converted to a worker trait arrangement, to take advantage of the extensive research conducted in the development of Volume II of the Dictionary of Occupational Titles (D.O.T.). Expert occupational analysts from eight national field centers collaborated in studying the occupations and determining the rating for worker trait components.

The identified student needs areas and their corresponding worker trait components follow:

Student Needs Areas	Worker Trait Components
Lack of employability skills Lack of high school diploma	Prerequisite Skills and Knowledges
Physical handicaps	Physical Demands
Mental/emotional handicaps	Worker Temperaments
Limiting Socio-Economic Circumstances	Specific Vocational Preparation (length of program)

The student needs area pertaining to the lack of a high school diploma or its equivalent was not considered separately, since such a requirement is an employer specification, and thus varies from job to job. Each of the worker traits areas are well defined in Supplement I to the D.O.T. For the purposes of this brochure, it should be sufficient to explain that Prerequisite Skills and Knowledges encompass six progressive levels of attainment in three areas: Reasoning Development, Mathematical Development, and Language Development; Physical Demands encompass activities requiring (1) strength, (2) climbing or balancing, (3) stooping, kneeling, crouching, or crawling, (4) reaching, handling, fingering, or feeling, (5) talking and/or hearing, (6) seeing; Worker Temperaments identify twelve different types of occupational situations to which workers must adjust and rate each D.O.T. occupation as to the number and type of such situations which are present; Specific Vocational Preparation refers to the length of training required to achieve proficient job performance. Points are assigned for each consideration, and then summed to indicate the total point value for each occupation.

c. Examples of Rating Method:(see attached legal-size sample of the Student Needs Rating Scale).

C. Program Effectiveness - 30 points Maximum

1. Attrition Rate - 10 points maximum

a. Sources of Data:
The Student Outcomes (follow-up) section of the CENIS Interface.

b. Rating Procedures:

Each program attrition (program leaving) rate is identified as an indication of that program's holding power. State average attrition rates are compiled and compared with the program rate. Point values are assigned according to the relationship of such comparisons as indicated in the following rating scale:

State average _____ + or - 10% 5 points
More than 10% below state average 10 points
More than 10% above state average 0 points
Statewide Attrition Rate = 24%

c. Examples of Rating Method:

Taxonomy	Program Area Name	Attrition Rate			
		State Average	Program Average	Difference	Points
04.1900	Transportation	24%	0%	+24%	10
07.0303	Nursing Assistants	24%	5%	+19%	10

2. Placement Rate - 10 points maximum

a. Sources of Data:

The Student Outcomes (follow-up) section of the CENIS Interface.

b. Rating Procedures:

Each program rate of placement in occupation for which trained or a related occupation is compared with the statewide placement average for all programs. Point values are assigned according to the resulting relationship as indicated in the following rating scale:

State average _____ + or - 10% 5 points
More than 10% above state average 10 points
More than 10% below state average 0 points
State Placement Average = 53%

c. Examples of Rating Method:

Taxonomy	Program Area Name	Placement Rate			
		State Average	Program Average	Difference	Points
04.1900	Transportation	53%	100%	+47%	10
07.0303	Nursing Assistants	53%	37%	-16%	0

3. Cost/Benefit Comparison - 10 points Maximum

a. Sources of Data:

The document "Program Cost Summary," developed by the Area Schools Division (costs) and the Vocational Student Follow-Up report indicating average wages earned by former students (benefits).

b. Rating Procedures:

For each program area, locate the appropriate cost per contact hour without capital outlay figure. Determine the average benefit by ascertaining median wages from annual follow-up data. The difference between hourly costs and hourly earnings will be considered the cost/benefit rate. Program cost/benefit figures will be compared with the average cost/benefit rate for all programs to determine point assignment.

The formula for determining the median wage is:

$$\text{Median} = L + \frac{(N/2 - F)i}{f}$$

where L = lower real limit of class containing median; N = total number of cases; F = total number of cases below class with median; f = number of cases in median; and i = the class interval. Points are assigned according to the following rating scale:

$.75 or more above average	(1.60)	10 points
.50 above average	(1.35)	8 points
.25 above average	(1.10)	6 points
Average cost benefit	(.85)	4 points
.25 below average	(.60)	2 points
More than .25 below		0 points

c. Examples of Rating Method:

See attached sheet for examples of the Cost/Benefit Rating Scale.

SAMPLE--STUDENT NEEDS RATING SCALE

Ratings indicate the Program's Potential for meeting the specified student needs as expressed in terms of worker requirements

Taxonomy	Program Area Name	Prerequisite Skills and Knowledges (Math, Reading, etc.)				Physical Demands				Worker Temperaments				Specific Vocational Preparation (Length of Program)				Total Points
		Not Required 8 Points	Occasionally Required 6 Points	Usually Required 4 Points	Critical to Performance 0 Points	Not Required 4 Points	Occasionally Required 3 Points	Usually Required 2 Points	Critical to Performance 0 Points	Not Required 4 Points	Occasionally Required 3 Points	Usually Required 2 Points	Critical to Performance 0 Points	4-19 wks 4 Points	20-47 wks 3 Points	48-72 wks 2 Points	73-96 wks 0 Points	
04.1900	Transportation (Truck Driver)		6					2			3			4				15
07.0303	Nursing Assistant			4				2				2		4				12

SAMPLE--COST/BENEFIT RATING SCALE

Taxonomy	Program Area Name	Median Formula	Average Earnings Per Hr.	Average Cost	Difference	Dev fr Avg Cost Benefit	Points
04.1900	Transportation (Truck Driver)	$222.5 + \frac{(22 - 0 \cdot 22)}{43} = .51 \times 25 = 12.75 + 225.50 = 238.25$	5.96	2.08	3.88	3.05	10
07.0303	Nursing Assistant	$125.5 + \frac{(44 - 2 \cdot 42)}{56} = .75 \times 25 = 18.75 + 50.50 = 69.25$	1.73	2.16	- .43	1.28	0

III. Ranking Procedures

Final point values were obtained by summing the point values assigned for each component, e.g., manpower needs, student interest, student need, etc. The program areas were then ranked in descending order, ranging from a high of 82 points for the Transportation program to 4 points for Agricultural Related Technology.

Program area names were assigned according to the Office of Education taxonomy structure, in order to maintain continuity with the State Titles utilized in the CE-4 Career Education Information System. Since the program areas are often broader in scope then the more specific occupational areas encompassed in the CENIS surveys, the taxonomy name is listed first, with the occupational area shown in parentheses where necessary for clarification or to indicate the emphasis of the CENIS investigation.

In several instances, different program areas received identical ranking scores. Therefore, a grouping number was used in these circumstances (e.g., 9-11, 18-22, etc.) instead of attempting to indicate an artificial delineation by using a different numbering system.

The resulting list of occupational programs ranked in priority order should be useful at all levels of decision making, as planners review existing offerings and contemplate the development of new programs. These data can offer valuable input in the compilation of people needs and manpower needs information, which forms a vital portion of the planning system. This list will not provide all of the data needed for efficient planning, since resource information concerning finances, staff, facilities, and equipment will have to be obtained from other sources. (See Appendix for a Planning Model and Components, which illustrate the factors involved in the planning process.)

The Iowa Priority Program Areas list will be updated at least once each year. During the year additional programs may be reviewed, the various ratings of components accomplished, and revisions made as indicated. Similarly, programs may be eliminated, or the rankings rearranged, according to the input of new data. Changes in the list will be communicated to all users of the Iowa Priority Program Areas listing.

PRIORITY PROGRAM RANKINGS, page 1 of 5 pages

Rank Order	Taxonomy	Program Area Name	Points Allocated						Total Pts.
			Manpower Needs	Student Availability		Program Effectiveness			
				Interest	Need	Attrition	Placement	Cost/Benefit	
1	04.1900	Transportation (Truck Driver)	17	20	15	10	10	10	82
2	17.0901	Photographic Lab. and Darkroom	30	8	14	10	10	0	72
3	17.2904	Waiter/Waitress	22	20	13	10	5	0	70
4	17.0303	Automotive Repair Specialization	16	20	14	10	5	0	65
5	17.1008	Dry-Wall Installation	30	0	14	10	10	0	64
6	14.0103	Cashier	8	20	14	10	10	0	62
7-8	01.0504	Landscaping	30	13	13	0	0	4	60
	04.1800	Recreation and Tourism (Recreation Director; Sales)	15	20	5	10	10	0	60
9-11	04.0100	Advertising Services (Mkt. Research Analyst; Acct. Exec.)	8	20	10	10	10	0	58
	17.[illegible]	Masonry	22	5	11	5	5	10	58
	17.2[illegible]	Law Enforcement	9	20	13	0	10	6	58
12	17.0[illegible]	Interior Decorating	13	20	9	10	5	0	57
13	04.0200	Apparel and Accessories Sales and Svcs.	17	20	14	0	0	4	55
14-15	04.0600	Food Distribution (Cashier/Checker; Salesman Driver)	11	7	12	10	10	4	54
	17.1010	Roofing	22	0	12	10	10	0	54
16-17	04.1300	Insurance (Sales; Management Trainee)	23	9	11	10	0	0	53
	17.3601	Millwork and Cabinetmaking	25	2	11	10	5	0	53
18-22	01.0299	Ag. Supplies/Svcs. (Veterinarian Asst.)	22	20	10	0	0	0	52
	01.0506	Turf Management	13	20	11	0	0	8	52
	07.0402	Physical Therapy	11	20	11	10	0	0	52
	14.0406	Receptionist	8	20	14	10	0	0	52
	17.2301	Foundry	19	2	11	10	10	0	52
23-24	04.0700	Food Services (Restaurant Hostess)	14	5	17	10	5	0	51
	17.2307	Tool and Die Maker	16	5	10	0	10	10	51
25-28	01.0100	Agricultural Production	15	3	9	10	10	2	49
	17.1009	Glazing	17	0	12	10	10	0	49
	17.2699	Personal Services (Reducing Salon Attendant)	30	1	18	0	0	0	49
	17.2903	Meatcutter	11	3	15	10	10	0	49
29	07.0203	Medical Lab. Assisting	8	11	11	5	5	8	48
30-35	01.0201	Agric. Chemicals (Sprayer; Exterminator)	29	4	14	0	0	0	47
	01.0202	Feeds (Feed Mixer; Sales; Elevator Mgmt.)	18	14	15	0	0	0	47
	04.1200	Industrial Marketing (Indus. Sales; Sales Mgmt.)	10	16	6	5	10	0	47
	07.0307	Home Health Aide	30	2	15	0	0	0	47
	17.1001	Carpentry	15	3	8	10	5	6	47
	17.1300	Drafting	10	6	10	10	5	6	47

PRIORITY PROGRAM RANKINGS, page 2 of 5 pages

Rank Order	Taxonomy	Program Area Name	Points Allocated						Total Pts.
			Manpower Needs	Student Availability		Program Effectiveness			
				Interest	Need	Attrition	Placement	Cost/Benefit	
36-37	07.0503	Nuclear Medical Technician	30	7	9	0	0	0	46
	17.2303	Machine Tool (Production Machine Operator)	9	4	13	5	5	10	46
38-41	07.0201	Cytology	28	6	11	0	0	0	45
	17.1099	Construction and Maintenance (Iron Worker; Cement Mason)	27	10	8	0	0	0	45
	17.1100	Custodial Services	6	0	15	10	10	4	45
	17.2304	Metal Trades Combined (Multi-Machine Operation; Assembly)	11	1	13	10	10	0	45
42-46	04.0500	Floristry	10	8	11	10	5	0	44
	04.1100	Hotel and Lodging	9	12	13	10	0	0	44
	14.0901	Clerk-Typist	14	9	15	0	0	6	44
	17.1000	Construction and Maintenance (Bldg. Maint.)	4	11	9	10	10	0	44
	17.2700	Plastics Occupations	6	0	18	10	10	0	44
47-51	07.0601	Opthalmic Dispensing	30	3	10	0	0	0	43
	14.0301	Duplicating Machine Operator	8	0	15	10	10	0	43
	14.0703	Stenographer	11	20	12	0	0	0	43
	17.1007	Plumbing and Pipefitting	13	3	6	10	5	6	43
	17.1601	Drycleaning	23	1	14	5	0	0	43
52-53	14.0204	Systems Analyst	5	4	5	10	10	8	42
	17.1902	Printing Press Occupations	13	5	14	0	10	0	42
54-55	01.0203	Seeds (Seed Analyst)	30	1	10	0	0	0	41
	17.1599	Electron. Communic. (Radio & TV Announcer)	8	20	9	0	0	4	41
56-58	07.0102	Dental Hygiene	9	17	14	0	0	0	40
	09.0201	Care and Guidance of Children	11	6	13	10	0	0	40
	17.1906	Bookbinding	25	1	14	0	0	0	40
59-62	16.0106	Civil Technology	18	2	11	0	0	8	39
	17.0201	Electrical Appliances	10	2	11	10	0	6	39
	17.1003	Heavy Equipment Operator	5	3	11	10	10	0	39
	17.1901	Composition, Makeup and Typesetting	3	2	14	10	10	0	39
63-68	04.1000	Home Furnishings	8	9	11	10	0	0	38
	07.0903	Inhalation Therapy	20	6	12	0	0	0	38
	09.0205	Institutional and Home Management	7	20	11	0	0	0	38
	14.0401	Commun. Systems (Telephone Operator)	4	20	14	0	0	0	38
	17.0900	Commercial Photography	0	12	11	0	5	10	38
	17.2901	Baker	7	0	11	10	10	0	38
69-72	14.0102	Bookkeeper	5	4	13	0	5	10	37
	17.1400	Electrical Occup. (Maintenance Electrician)	0	1	12	10	10	4	37
	17.3400	Leatherworking	23	1	13	0	0	0	37
	17.3500	Upholstering	5	4	13	5	10	0	37

PRIORITY PROGRAM RANKINGS, page 3 of 5 pages

Rank Order	Taxonomy	Program Area Name	Points Allocated						Total Pts.
			Manpower Needs	Student Availability		Program Effectiveness			
				Interest	Need	Attrition	Placement	Cost/Benefit	
	14.0104	Office Machine Operator	10	11	15	0	0	0	36
	17.0600	Business Machine Maintenance	0	0	12	10	10	4	36
73-77	17.1005	Painting and Decorating	9	4	13	5	5	0	36
	17.1402	Lineman	0	0	11	5	10	10	36
	17.1501	Communications (Communications Equip. Repair)	0	0	13	3	10	10	35
	04.1600	Petroleum (Service Station Sales & Mgmt.)	9	6	3	5	10	2	35
	07.0502	Radiation Therapy	23	0	12	0	0	0	35
	07.0904	Medical Assistant	0	0	15	5	5	10	35
	14.0202	Keypunch Operator	8	6	16	5	0	0	35
78-85	17.0301	Body and Fender	0	3	14	5	5	8	35
	17.1200	Diesel Mechanic	0	1	9	5	10	10	35
	17.1403	Electric Motor Repairman	19	3	13	0	0	0	35
	17.2305	Sheet Metal	8	1	11	5	10	0	34
	01.0505	Nursery Operation and Management	19	2	7	0	0	6	34
	04.0400	Finance and Credit (Loan Officer; Teller)	10	1	13	0	10	0	34
86-89	07.0301	Nursing, Associate Degree	5	1	3	5	10	10	34
	14.0303	General Office Clerk	7	3	12	5	5	2	34
	16.0109	Electromechanical Technician	25	1	7	0	0	0	33
	17.0102	Heating	12	0	11	10	0	0	33
90-93	17.0401	Aircraft Maintenance	0	2	11	5	5	10	33
	17.2902	Cook/Chef	12	5	11	5	0	0	33
	01.0200	Ag. Supplies/Services (Feed Research Aid)	0	0	11	5	10	6	32
	04.0800	General Merchandise (Sales; Management; Buyers)	8	8	6	5	5	0	32
	07.0305	Surgical Technician	6	2	13	0	5	6	32
94-99	07.0701	Environmental Health	4	0	8	10	10	0	32
	17.2302	Machine Shop	5	1	9	10	5	2	32
	17.3399	Textile Production (Sewing Machine Operator)	16	1	15	0	0	0	32
	07.0801	Mental Health Technician	7	12	12	0	0	0	31
100 -	17.1002	Electrician (Construction)	0	1	11	10	5	4	31
102	17.3100	Small Engine Repair	0	3	13	5	0	10	31
	01.0301	Agricultural Power and Machinery (Sales; Repair; Set-Up)	5	2	13	5	5	0	30
103 -	04.0300	Automotive (Sales)	8	3	14	5	0	0	30
105	07.0303	Nursing Assistants	7	1	12	10	0	0	30

PRIORITY PROGRAM RANKINGS, page 4 of 5 pages

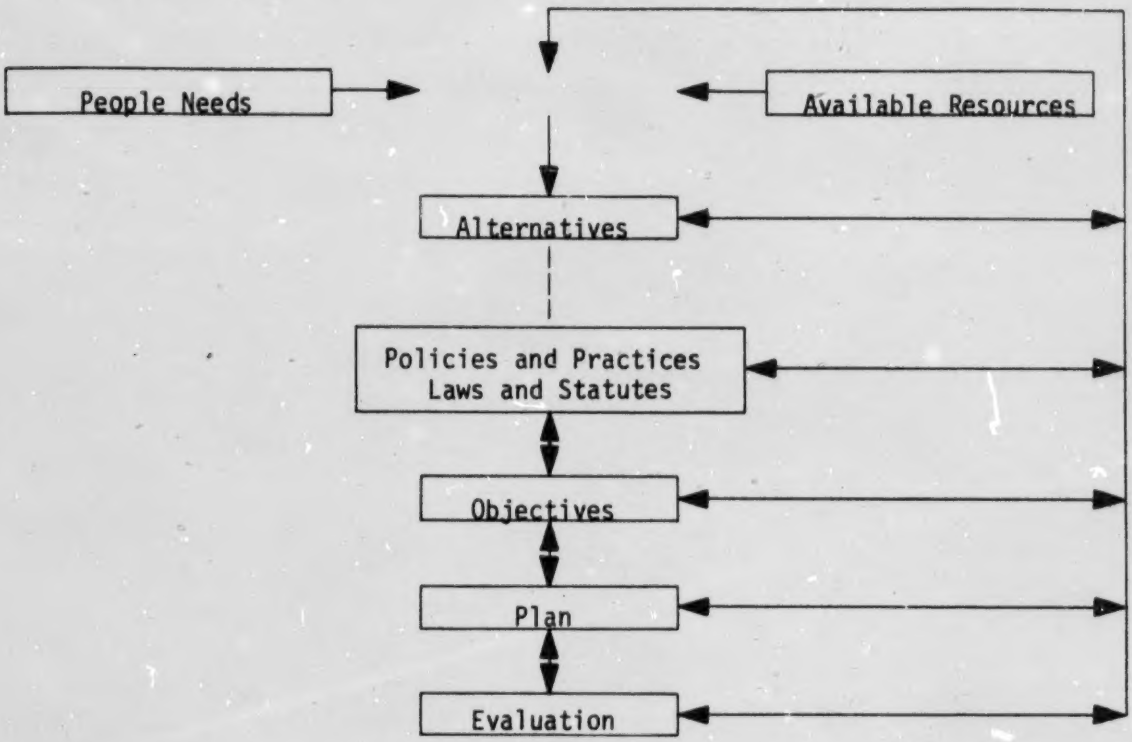
Rank Order	Taxonomy	Program Area Name	Points Allocated						Total Pts.
			Manpower Needs	Student Availability		Program Effectiveness			
				Interest	Need	Attrition	Placement	Cost/Benefit	
106 - 112	04.0900	Hdwe., Bldg. Mtls., Farm and Garden Supplies (Sales)	0	0	12	10	5	2	29
	07.0302	Practical Nursing	0	1	12	5	5	6	29
	14.0201	Computer and Console Operator	9	0	15	5	0	0	29
	14.0399	Filing, Office Machine (Transcribing Mch. Operator)	14	0	15	0	0	0	29
	17.1602	Laundering	13	0	16	0	0	0	29
	17.0702	Window Display	3	3	13	10	0	0	29
	17.2101	Instruments (Testing Devices, Gauges, Controls Repair)	0	0	14	5	10	0	29
113	07.0101	Dental Assisting	0	2	14	5	5	2	28
114 - 122	07.0103	Dental Lab. Technician	0	0	8	5	10	4	27
	07.0907	Electroencephalograph Technician	7	7	13	0	0	0	27
	09.0203	Food Management, Production (Food Establ. Manager)	0	0	12	10	5	0	27
	14.0403	Mail and Postal Clerk	3	8	16	0	0	0	27
	14.0499	Infor. Comm. (Library Assistant)	5	7	15	0	0	0	27
	14.0702	Secretaries	2	6	12	0	0	0	27
	15.0599	Home Ec. Related (Social Services Aide)	18	0	9	0	5	2	27
	17.0703	Product Design (Industrial Designer)	13	5	9	0	0	0	27
	17.1503	Radio/Television	0	2	13	5	0	0	27
123 - 127	01.0104	Farm Business Management	0	0	6	10	5	2	27
	07.9900	Health Occupations, Other (Health Care Admin.)	11	8	7	0	10	0	26
	16.0699	Misc. Tech. (Waste Water Technician)	11	3	12	0	0	0	26
	17.0302	Automobile Mechanic	0	1	11	5	0	0	26
	17.0700	Commercial Art	0	7	13	0	5	4	26
128 - 129	14.0302	File Clerk	9	0	16	0	0	6	26
	17.2801	Fireman Training	7	5	13	0	0	0	25
130 - 132	07.0902	Electrocardiograph Tech.	8	3	13	0	0	0	24
	16.0110	Environmental Control Technician	16	2	6	0	0	0	24
	17.0100	Air Conditioning	0	1	8	5	0	0	24
133 - 138	07.0404	Orthotics (Orthopedic Appl. Tech.)	0	0	13	5	5	10	24
	07.0908	Food Service (Dietetic Technician)	6	6	11	0	5	0	23
	14.0101	Accountant (Accounting Technician)	8	2	5	0	0	0	23
	14.0503	Shipping and Receiving Clerk	7	1	15	0	0	8	23
	16.0114	Metallurgical Technician	9	1	13	0	0	0	23
	17.2102	Watchmaking and Repair	9	0	14	0	0	0	23

PRIORITY PROGRAM RANKINGS, page 5 of 5 pages

Rank Order	Taxonomy	Program Area Name	Points Allocated						Total Pts.
			Manpower Needs	Student Availability		Program Effectiveness			
				Interest	Need	Attrition	Placement	Cost/Benefit	
	07.0907	Medical Emergency Technician	7	2	12	0	0	0	21
139 -	16.0107	Electrical Technician	17	0	4	0	0	0	21
141	17.1903	Lithography-Photography	8	0	13	0	0	0	21
142 -	16.0108	Electronic Technology	0	2	8	0	0	10	20
143	16.0111	Industrial Technician	12	3	5	0	0	0	20
	01.0101	Animal Science (Poultryman; Technical Adviser)	0	2	11	0	5	0	18
144 -	16.0112	Instrumentation Technician	13	0	5	0	0	0	18
147	17.0101	Cooling (Refrigeration Mechanic)	0	0	8	10	0	0	18
	17.1900	Graphic Arts Occupations	0	0	13	5	0	0	18
	07.0501	Radiologic Technology	0	3	12	0	0	0	15
	09.0202	Clothing Mgmt., Prod. and Svcs. (Clothing Maint. Spec.)	1	0	14	0	0	0	15
148 -	09.0204	Home Furnishings, Equip., and Svcs. (Home Service Rep.)	0	0	10	5	0	0	15
152	17.0202	Gas Appliances Repairman	2	0	13	0	0	0	15
	17.2602	Cosmetology	0	2	13	0	0	0	15
153	17.2601	Barbering	0	1	13	0	0	0	14
154 -	14.0805	Office Manager and Chief Clerk	2	5	6	0	0	0	13
155	16.0602	Fire and Fire Safety (Fire Safety Inspection)	5	3	5	0	0	0	13
	01.0401	Food Products (Buyer, Grain and Livestock)	5	0	7	0	0	0	12
156 -	01.0603	Soil (Soil Conservation Aide)	0	2	10	0	0	0	12
158	14.0203	Programmer	0	3	9	0	0	0	12
	16.0105	Chemical Technology	11	0	0	0	0	0	11
159 -	17.0402	Aircraft Operations	0	1	10	0	0	0	11
161	17.2800	Public Service Occup. (Building Inspector)	0	0	11	0	0	0	11
162	16.0113	Mechanical Technician	2	0	5	0	0	0	7
163	16.0200	Ag. Related Tech. (Agric. Commodity Insp.)	0	0	4	0	0	0	4

APPENDIX

CAREER EDUCATION PLANNING MODEL



The overall planning diagram applies primarily to long-range, comprehensive planning. These components should be considered in any planning activity, but would normally not involve as extensive data-gathering and analysis.

The objectives-plan-evaluation cycle is continuous in any type of planning or operational effort.

CAREER EDUCATION PLANNING COMPONENTS

PEOPLE NEEDS DATA

Manpower Requirements
- Labor Demand
- Labor Supply
- Student Interests

Population Need Factors
- Age levels
- Sex
- Educational Levels
  - Elementary
  - Secondary
  - Postsecondary
  - Adult
- Minority Groups
- Veterans
- Welfare Recipients
- Handicapped
- Low School Achiever
- Economic Status
- Social Adjustment
- Dropouts
- Unemployed
- Underutilized
- Rural area
- Urban area
- Migration Trends

RESOURCES DATA

Staff Resources (public and private)
- Professional
- Support
- Administration and Supervision

Physical Resources (public and private)
- Facilities
- Equipment
- Materials

Time

Financial Resources

Programs, Services, Activities (current)

Staff Development (Pre-service, In-Service Training)

Community Resources
- Advisory Committees
- Community Support

DETERMINING PROGRAM EFFECTIVENESS

Evaluation (Self-Appraisal, Team Visits, Third Party)
Follow-up Studies
Cost Benefit Analysis